IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Amendments to the Claims:

1. (Currently Amended) A Brayton cycle apparatus[[,]] comprising:

a scroll compressor for compressing a working fluid;

a scroll expander for operating in cooperation with an orbiting action of the scroll compressor, wherein the working fluid compressed by the scroll compressor is fed to the scroll expander; and

a heating device for heating the compressed working fluid fed from the scroll compressor to the scroll expander;

wherein the scroll compressor includes a compressor case, a fixed compression scroll formed in the compressor case, and an orbital compression scroll combined with the fixed compression scroll to come in contact with the compressor case in a slidable manner or to face the compressor case with a narrow gap therebetween; and

the scroll expander includes an expander case, a fixed expansion scroll formed in the expander case, and an orbital expansion scroll combined with the fixed expansion scroll to come in contact with the expander case in a slidable manner or to face the expander case with a narrow gap therebetween, the Brayton cycle apparatus further being characterized by:

an orbital partitioning wall for generating an orbiting action, wherein the orbital compression scroll and the orbital expansion scroll are arranged on the orbital partitioning wall in a manner that the orbital compression scroll and the orbital expansion scroll are located at opposite sides of the orbital partition;

wherein the scroll compressor releases heat transferred from the scroll expander to the orbital partitioning wall in the atmosphere through the compressor case.

2-3. (Canceled)

4. (Previously Presented) The Brayton cycle apparatus according to claim 1, wherein the expander case includes a heat absorption chamber into which the working liquid introduced into the scroll expander prior to expansion is introduced, the heat absorption chamber being partitioned by a wall for heating the working liquid when the working liquid is expanding.

5. (Previously Presented) The Brayton cycle apparatus according to claim 1, wherein the scroll compressor uses atmospheric gas as the working fluid, compresses the atmospheric gas, and releases the expanded working fluid into the atmosphere.

6. (Previously Presented) The Brayton cycle apparatus according to claim 1, wherein the heating device is a heat exchanger for transferring external heat to the working fluid through heat exchange.

7. (Previously Presented) The Brayton cycle apparatus according to claim 1, wherein a wall surface of the expander is kept warm.

8. (Previously Presented) A Brayton cycle apparatus comprising:

a positive-displacement compressor for compressing a working fluid;

a scroll expander for generating an orbiting action in cooperation with a compression action of the positive-displacement compressor, wherein the working fluid compressed by the positive-displacement compressor is fed to the scroll expander; and

a heating device for heating the compressed working fluid fed from the positive-displacement compressor to the scroll expander;

wherein a wall surface of the expander is kept warm.

9. (Canceled)

10. (Previously Presented) An exhaust heat energy recovery apparatus for an internal combustion engine for recovering exhaust heat energy of the internal combustion engine as kinetic energy, wherein the exhaust heat energy recovery apparatus comprises a Brayton cycle apparatus including:

a compressor for compressing a working fluid; and

an expander to which the working fluid compressed by the compressor is fed, wherein the compressed working fluid fed from the compressor to the expander is heated by heat transferred from a flow passage wall of an exhaust flow passage of the internal combustion engine;

wherein the compressor is a scroll compressor including a compressor case, a fixed compression scroll formed in the compressor case, and an orbital compression scroll combined with the fixed compression scroll to come in contact with the compressor case in a slidable manner or to face the compressor case with a narrow gap therebetween;

the expander is a scroll expander including an expander case, a fixed expansion scroll formed in the expander case, and an orbital expansion scroll combined with the fixed expansion scroll to come in contact with the expander case in a slidable manner or to face the expander case with a narrow space therebetween, the Brayton cycle apparatus further being characterized by:

a heating device, for heating the compressed working fluid fed from the scroll compressor to the scroll expander with heat from the flow passage wall, and an orbital partitioning wall for generating an orbiting action, wherein the orbital compression scroll and the orbital expansion scroll are arranged on the orbital partitioning wall in a manner that the orbital compression scroll and the orbital expansion scroll are located at opposite sides of the orbital partition; and

wherein the orbital partitioning wall and the compressor case are made of a high heat-conductive material, and the expander case is made of a heat-resistant material.

11-13. (Canceled)

14. (Currently Amended) The exhaust heat energy recovery apparatus according to claim 10, ~~characterized in that~~ wherein an aluminum alloy is used as the high heat-conductive material, and an iron alloy is used as the heat-resistant material.

15. (Previously Presented) The exhaust heat energy recovery apparatus according to claim 10, wherein a wall surface of the expander is kept warm.

16-18. (Canceled)

19. (Previously Presented) A Brayton cycle apparatus comprising:

an orbital partitioning wall having a first surface on which an orbital compression scroll is formed and a second surface on which an orbital expansion scroll is formed;

a scroll compressor including the orbital compression scroll and a fixed compression scroll combined with the orbital compression scroll;

a scroll expander including the orbital expansion scroll and a fixed expansion scroll combined with the orbital expansion scroll;

a compressed working fluid passage for supplying a compressed working fluid from the scroll compressor to the scroll expander; and

a heat source for heating the working fluid in the scroll expander through heat transfer;

wherein the scroll compressor has a compressor case arranged on the first surface, the scroll expander has an expander case arranged on the second surface, the compressed working fluid passage has a through-hole formed in the orbital partition, and the through-hole communicates the interior of the compressor case with the interior of the expander case.

20. (Canceled)

21. (Previously Presented) The Brayton cycle apparatus according to claim 19, wherein:

the scroll expander has a case fixed to the fixed expansion scroll; and

the heat source comes in contact with the case thereby heating the working fluid in the scroll expander through the case or the fixed expansion scroll.

22-23. (Canceled)

24. (Currently Amended) The Brayton cycle apparatus according to claim [[2]]1, wherein the scroll compressor uses atmospheric gas as the working fluid, compresses the atmospheric gas, and releases the expanded working fluid into the atmosphere.

25. (Currently Amended) The Brayton cycle apparatus according to claim [[3]]1, wherein the scroll compressor uses atmospheric gas as the working fluid, compresses the atmospheric gas, and releases the expanded working fluid into the atmosphere.

26. (Previously Presented) The Brayton cycle apparatus according to claim 4, wherein the scroll compressor uses atmospheric gas as the working fluid, compresses the atmospheric gas, and releases the expanded working fluid into the atmosphere.

27. (Previously Presented) The Brayton cycle apparatus according to claim 5, wherein the scroll compressor uses atmospheric gas as the working fluid, compresses the atmospheric gas, and releases the expanded working fluid into the atmosphere.

28. (Currently Amended) The Brayton cycle apparatus according to claim [[2]]1, wherein the heating device is a heat exchanger for transferring external heat to the working fluid through heat exchange.

29. (Currently Amended) The Brayton cycle apparatus according to claim [[3]]1, wherein the heating device is a heat exchanger for transferring external heat to the working fluid through heat exchange.

30. (Previously Presented) The Brayton cycle apparatus according to claim 4, wherein the heating device is a heat exchanger for transferring external heat to the working fluid through heat exchange.

31. (Previously Presented) The Brayton cycle apparatus according to claim 5, wherein the heating device is a heat exchanger for transferring external heat to the working fluid through heat exchange.

32. (Previously Presented) The Brayton cycle apparatus according to claim 24, wherein the heating device is a heat exchanger for transferring external heat to the working fluid through heat exchange.

33. (New) The Brayton cycle apparatus according to claim 1, wherein the orbital partitioning wall and the compressor case are made of high-heat conductive material, and the expander case is made of a heat-resistant material.

34. (New) The Brayton cycle apparatus according to claim 33, wherein an aluminum alloy is used as the high heat-conductive material, and an iron alloy is used as the heat-resistant material.

35. (New) The Brayton cycle apparatus according to claim 8, wherein the scroll expander includes an expander case and the heating device has an orbital partitioning wall.

36. (New) The Brayton cycle apparatus according to claim 8, wherein the orbital partitioning wall is made of high-heat conductive material, and the expander case is made of a heat-resistant material.

37. (New) The Brayton cycle apparatus according to claim 36, wherein an aluminum alloy is used as the high heat-conductive material, and an iron alloy is used as the heat-resistant material.

38. (New) The Brayton cycle apparatus according to claim 19, wherein the orbital partitioning wall and the compressor case are made of high-heat conductive material, and the expander case is made of a heat-resistant material.

39. (New) The Brayton cycle apparatus according to claim 42, wherein an aluminum alloy is used as the high heat-conductive material, and an iron alloy is used as the heat-resistant material.

40. (New) The Brayton cycle apparatus according to claim 19, wherein a wall surface of the expander is kept warm.